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CAROTID ULTRASOUND IDENTIFIES HIGH RISK SUBCLINICAL ATHEROSCLEROSIS IN ADULTS WITH LOW FRAMINGHAM RISK SCORES

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Background: Worldwide, cardiovascular (CV) disease remains the most common cause of morbidity and mortality. Although effective in predicting CV risk in select populations, the Framingham Risk Score (FRS) fails to identify many high risk young individuals who experience premature CV events. Carotid ultrasound for intima media thickness (CIMT) and plaque detects subclinical atherosclerosis and is predictive of future CV risk. The goal of this study was to determine CIMT in young asymptomatic individuals with low and intermediate FRS (< 2% annualized event rate) and its effect on pharmacotherapy recommendations.

Methods: Individuals ≤ 65 years old undergoing carotid ultrasound examination at our institution for primary prevention not taking statins and without diabetes mellitus or history of coronary artery disease were included. FRS, clinical characteristics and carotid ultrasound were obtained for each subject.

Results: Of 441 subjects with mean age 49.7 ± 7.9 years, 185 (42%) (95% confidence range 37.3 - 46.5%) had high risk carotid ultrasound (CIMT ≥ 75th percentile adjusted for age, gender and race or presence of plaque). Of those with FRS ≤ 5 (N=336) (age 48.0 ± 7.6, FRS 2.5 ± 1.5), 127 (38%) had high risk carotid ultrasound (95% CI 32.6 - 43.0%). For individuals with FRS ≤ 5 and high risk carotid ultrasound (N=127) (age 47.3 ± 8.1 and FRS 2.5 ± 1.5), lipid lowering therapy was recommended by their treating physician in 77 (61%).

Conclusions: Carotid ultrasound identifies a higher risk subgroup in a large percentage of asymptomatic young to middle aged individuals with a low FRS. Furthermore, detection of subclinical atherosclerosis by carotid ultrasound alters pharmacologic therapy recommendations and risk factor targets.